

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 E21B7/18 B65G54/02 B03C1/12 E21B21/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 E21B B65G B03C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 20 52 516 A (SELLNOW W) 27 April 1972 (1972-04-27) page 2, line 7 - line 17	1,7,8
Y	page 4, line 1 - line 15 page 5, line 14 - line 21 page 6, line 22 - page 7, line 12; figures 1,3	2-6,9-16
X	DE 28 32 037 A (CANON KK) 31 January 1980 (1980-01-31) figures 1,3	1
X	US 3 952 857 A (NAZUKA IWAO) 27 April 1976 (1976-04-27) figures 1,4A,4B	1-4,7
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☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

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O document referring to an oral disclosure, use, exhibition or other means

P document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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& document member of the same patent family

Date of the actual completion of the international search

13 September 2004

Date of mailing of the international search report

24/09/2004

Name and mailing address of the ISA

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 02/34653 A (SHELL CANADA LTD ;SHELL INT RESEARCH (NL)) 2 May 2002 (2002-05-02) cited in the application the whole document -----	2-4,9, 13-15
Y	US 3 489 280 A (MERWIN ROBERT F ET AL) 13 January 1970 (1970-01-13) figures 3,5 -----	5,6
Y	US 5 170 891 A (BARRETT WILLIAM T) 15 December 1992 (1992-12-15) column 7, line 13 - line 26; figure 6 -----	11,12,17
A	US 6 412 643 B1 (WYSOLMIERSKI ROBERT T) 2 July 2002 (2002-07-02) the whole document -----	
Y	US 4 993 503 A (MANN THOMAS H ET AL) 19 February 1991 (1991-02-19) column 5, line 18 - line 24 -----	16
Y	US 6 510 907 B1 (BLANGE JAN JETTE) 28 January 2003 (2003-01-28) column 1, line 42 - line 58 column 5, line 8 - line 18; figures 1,4,5 column 4, line 58 - line 61 -----	10,17,18
Y	US 3 831 753 A (GAYLORD E ET AL) 27 August 1974 (1974-08-27) -----	18
A	column 2, line 4 - line 12 column 2, line 55 - line 56; figure 2 -----	16
A	US 3 375 886 A (MORI ERNEST A ET AL) 2 April 1968 (1968-04-02) the whole document -----	18

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